

## PATENT ABSTRACTS OF JAPAN

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## (54) HEALTHY DRINK

## (57)Abstract:

PURPOSE: To supply water after sports and physical labor and to provide oxygen important for fatigue recovery, by dissolving, under pressure, an oxygen gas in a drink properly prepared by a conventional procedure.

CONSTITUTION: Each given amount of mineral water is poured into bottles, diluted with an oxygen gas-containing water and stoppers are placed on the bottles. Carbonated water used in production of aerated water is directly used as the oxygen-containing water and the oxygen-containing gas is produced by dissolving liquefied oxygen gas in water. When the drink is drunk after sport or physical labor, an oxygen gas partially liberated and gasified from the drink in removal of a stopper from the drink container or in drinking is sucked as inhalation into the lung. Dissolved oxygen together with active ingredients such as water and minerals is rapidly absorbed in the stomach and the intestine. Consequently, very refreshing and relaxing feeling is obtained.

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**Title of the Invention: A Health Drink**

Application No.: Sho 62-182887

Date of Application: 22 July 1987

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## **SPECIFICATION**

### **1. Title of the Invention**

A health drink

### **2. Scope of Patent Claims**

A health drink in which oxygen gas is dissolved under pressure in a drink prepared as desired by normal methods.

### **3. Detailed Explanation of the Invention**

#### **Field of Industrial Application**

The present invention relates to drinks and in particular to health drinks which effect rehydration after the body has been exercised by sport, physical work and suchlike and which in addition can supply oxygen, which is important for recovery from fatigue.

#### **Prior Art**

Various sorts of refreshing drinks such as fruit juice drinks, Cola and carbonated drinks have been habitually used for some time, but nowadays the aims of recovery from fatigue and the maintenance of health have come to the surface. Sports drinks, nutritious drinks, various sorts of health teas and suchlike in which the effective ingredients are adjusted accordingly are being sold on the market and there is now a boom in these health drinks.

So-called sports drinks effect replenishment of minerals in combination with replenishment of moisture lost by sweating. In making the minerals into an aqueous solution they aim to let moisture be absorbed smoothly and without it being onerous by making the osmotic pressure close to its value in the body fluid components.

Furthermore, nourishing drinks have added to them, besides minerals, various sorts of amino acids or royal jelly, Korean ginseng, vitamins, various sorts of extracts and so on as desired. Health teas, such as oolong tea, adlai tea and suchlike largely contain ingredients that are effective for the metabolism and for healthy nourishment and they are said to be good for the body. Among these there are ones made into drinks aerated with

carbon dioxide in order to increase the feeling of refreshment. There are ones like the conventional so-called refreshing drinks which cure the thirst in the throat with something flavoured and give a feeling of satisfaction and have also come to be drunk for any benefit over and above this that they can give to the body. On the other hand, be it sport or be it physical work, the whole body demands oxygen after exercise. In particular, in the case of professionals who do violent exercise, oxygen may even be temporarily inhaled from an oxygen cylinder with the aim of early recovery.

### **Problems to Be Overcome by the Invention**

However, inhaling oxygen from an oxygen cylinder is not something that everybody can do at any time at all readily and at ease. Having said that, it is a fact that one quickly becomes very comfortable if a replenishment of oxygen can be received after exercise. Furthermore, as one wishes to breathe freely again after sport or physical work rather than really taking away fatigue, whether or not an instant feeling of being refreshed can readily be obtained is important.

### **Means of Overcoming the Problems**

The health drink of the present invention is characterised in that oxygen gas is dissolved under pressure in a drink prepared as desired by normal methods. Together with the rehydration of moisture and suchlike it can also replenish oxygen and it can increase still further the feeling of being refreshed during rehydration after sweating.

### **Operation**

As oxygen gas is dissolved under pressure in the health drink of this invention, if the stopper of the drink container is removed then some of the oxygen that was dissolved until then is liberated and becomes gas absorbed from the lungs. Furthermore, oxygen that remains dissolved, together with effective ingredients such as water, minerals and suchlike, is rapidly absorbed as it passes through the gullet, stomach and intestines as its oxygen concentration differs from that in the blood sugars. It is carried by the blood to all parts of the body and serves as an aid to recovery from fatigue.

### **Practical Embodiments**

Next, as one practical embodiment of this invention an explanation will be given for where oxygen gas is dissolved in so-called mineral water.

That is to say, what is added for mineral water is naturally inorganic salts, but they must also be things that are acknowledged as food additives. Moreover, there are the case where natural mineral water that meets water quality standards is made the raw material just as it is and the case where the desired taste is obtained by mixing suitable salts such as, for example, 80g of sodium carbonate, 100g of sodium chloride, 5g of magnesium chloride, 10g of calcium chloride and suchlike per 100 litres of the product drink into pure water obtained by passing it through ion-exchange resin or into water from the ordinary town water main from which the chlorine has been removed and making it into an aqueous solution. Moreover, to increase the content ratio of oxygen gas, it is advantageous for the salts that are to be added to be ones with a high degree of solvency. In general, sodium salts and potassium salts dissolve readily in water, but calcium salts and magnesium salts are difficult to dissolve and therefore the former will become the main components of the added salts.

The health drink of one practical embodiment of this invention can be made by pouring a fixed amount of such mineral water into each bottle, filling up with oxygen gas water under pressure so as to dilute this and stoppering it. Oxygen gas water may be made by dissolving liquefied oxygen gas in water, making use of a carbonator used when making conventional carbonated water just as it is. At this time it is necessary to keep the temperature of the water that is to absorb the oxygen gas as low as possible in order to make the degree of dissolving high. Furthermore, the higher the pressurisation the more advantageous it is, taking into consideration the ability of the container, such as a bottle, to withstand pressure. Moreover, as oxygen does not dissolve to the same extent as carbon dioxide, it is desirable to fill up to the top with the drink. Furthermore, not only bottles but also cans may be used as the container.

Now if the drink in which oxygen gas has been dissolved under pressure in this way is drunk after sport or physical work and suchlike, at the time of drinking some of the oxygen gas from the drink which is liberated and gasified when the stopper of the container is removed is inhaled and taken in from the lungs. In addition, the oxygen that remains dissolved has an oxygen concentration that differs from that in the blood sugars and is rapidly absorbed as it passes through the gullet, stomach and intestines together with the water, minerals and suchlike effective components.

Consequently, as well as a feeling of satisfaction as the throat is moistened, replenishment of oxygen, albeit small, can be done very rapidly and therefore an extremely refreshed and easy feeling can be obtained at the instant of drinking.

An explanation has been given above for where oxygen gas was dissolved under pressure in a drink prepared with the addition of minerals, but the drink prepared is not limited to one where something or anything is added. It may be just pure drinking water. Furthermore, it may be a drink where the flavouring or seasoning is regarded as important for a so-called refreshing drink, but, because oxygen gas is dissolved in it, it is inadvisable to add things that oxidise or degenerate on account of the dissolved oxygen. Furthermore, there is a problem if material is used for the drink container which is oxidised by the dissolved oxygen. It is necessary to give due prior consideration to these points. Of course there are various bacteria and micro-organisms present and there is a high probability the these will breed and ferment because of the dissolved oxygen. It is therefore necessary to sterilise well and remove them. Because of this, the oxygen gas may sometimes be encapsulated separately and fill the cylinder so as to dissolve the oxygen gas in the drink immediately before drinking.

**Effect of the Invention**

As described above, as the present invention is a health drink in which oxygen gas is dissolved under pressure in a drink made as required by normal methods, when it is desired to moisten the throat and when the whole body requires oxygen then rehydration combined with replenishment of oxygen can be effected easily at any time. After sport or after physical work it is possible to breathe freely again straight away with an accompanying increased feeling of being refreshed and it is without doubt the optimum as a health drink after sport or physical work.

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